REMARKS

Claims 1-39 are currently pending in the application. Claims 1, 2, 6-8, 12, and 13 have been rejected under 35 USC 102(b) and claims 3-5, 9-11, 14-26, and 36-39 have been rejected under 35 USC 103(a). Claims 27-34 have been allowed. Claim 35 is objected to but otherwise allowable.

The Applicants appreciate the Examiner's thorough examination of the subject application and request reconsideration of the subject application based on the above amendment and following remarks.

SECTION 102(b) REJECTIONS

The Examiner has rejected claims 1, 2, 6-8, 12, and 13 under 35 USC 102(b) as being anticipated by U.S. Patent Number 5,166,085 to Wakai, et al. ("Wakai" or the "Wakai Reference"). The Applicants respectfully traverse these rejections in view of the above amendments and for the reasons provided below.

Claims 1, 2, and 6-8

The present invention provides an active matrix substrate with an insulating film 8 having openings 11 on one or both of the scanning electrode wiring 2 and the signal electrode wiring 6, a device using the substrate, as well as a method of manufacturing the same. A metal layer is disposed in the openings 11a of the insulating film in contact with the electrode wiring 2 and/or 6. As shown in Figure 2(e), the metal layer 12 is situated within the hole 11a of the insulating film 8 in direct contact with signal electrode wiring 6 and the scanning electrode wiring 2. Openings 11a are provided on the other portions of the source electrode 6 that the extended portions where the TFT elements 9 are provided. See, e.g., Specification, FIG. 2. Of note, the scanning electrode wiring 2 and the signal electrode wiring 6 are disposed in a lattice pattern and either one or both include openings for a metal layer 12.

With the present invention, the metal layer is selectively formed on the electrodes in the openings in the insulating film. As a result, a conventional etching step, in which metal was patterned and etched to form the metal layer, is unnecessary. Moreover, because an etching step is unnecessary, a thicker metal layer does not significantly add to the amount of wasted metal. Accordingly, active matrix substrates with sufficiently reduced electrode wire resistance are easily and inexpensively manufactured. See, e.g., Id., page 8, line 20 to page 9, line 6.

In contrast, the Wakai reference discloses an inverted staggered type thin-film transistor ("TFT") having a lattice arrangement comprising electrode wires for the gate (signal) electrode 113 and the drain electrode 114. The Wakai reference teaches providing an opening 109 from the transparent (pixel) electrode 110 to the source electrode 107. Wakai does not teach, mention or suggest providing openings on the signal (drain) electrode 114 or the scan (gate) electrode 113. This differs appreciably from the present invention.

Specifically, the claim language recites that the openings in the insulating film be "in predetermined areas at least on either the scanning electrode wiring or on the signal electrode wiring." If the drain electrode 114 in Wakai corresponds to the scanning electrode, then there is nothing in the Wakai reference that teaches, mentions or suggests providing an opening over the gate line 113 or the drain line 114. Indeed, the only opening is reference number 109 that connects the transparent electrode 110 to the source electrode 107. On the other hand, if the source electrode 107 is the "scanning electrode wiring, then Wakai does not teach, mention or suggest that, "electrode wires constituted by scanning electrode wiring and signal electrode wiring that are arranged in a lattice" as recited in the claims. The only wirings that are latticed according to Wakai are the gate and the drain electrodes 113 and 114. Accordingly, the Applicants respectfully maintain that the Wakai reference does not teach, mention or suggest the invention as claimed.

Wakai also requires an etching as a part of the steps for metallization of the substrate. Thus, the method of manufacture also differs from the present invention.

Accordingly, it is respectfully submitted that, claims 1, 2, 6-8, 12, and 13 are not anticipated or made obvious by the Watai reference and further, satisfy all of the requirements of 35 U.S.C. 100, et seq., especially § 102(b). Accordingly, claims 1, 2, 6-8, 12, and 13 are allowable. Moreover, it is respectfully submitted that the subject application is in condition for allowance. Early and favorable action is requested.

35 USC § 103(a) REJECTIONS

The Examiner has rejected claims 3, 4, 9, 10, 14-17, 19-22, and 26 under 35 USC § 103(a) as being unpatentable over Watai; claims 5, 11, 18, and 23-25 under 35 USC § 103(a) as being unpatentable over Watai in view of U.S. Patent Number 5,446,569 to Iwai, et al. ("Iwai" or the "Iwai Reference"); and claims 36-39 under 35 USC § 103(a) as being unpatentable over Watai in view of U.S. Patent Number 6,188,516 to Kim ("Kim" or the "Kim Reference"). Claim 22 has been amended to include the subject matter of objected to claim 35. Hence, with respect to claim 22, the grounds for rejection are moot. With respect to the other claims, the Applicants respectfully traverse these rejections in view of the above amendments and for the reasons provided below.

Claims 3, 4, 9, 10, 14-17, 19-21, and 26

The shortcomings of the Watai reference have been discussed in detail in our discussion of 35 USC § 102(b). For the same reasons that Watai does not anticipate the invention as claimed, it also cannot make the present invention obvious. Accordingly, the Applicants respectfully assert that claims 3, 4, 9, 10, 14-17, 19-21, and 26 are allowable.

Claims 5, 11, 18, and 23-25

Nor can the Iwai reference make up for the deficiencies of the Watai reference. The Iwai reference does not teach providing openings at predetermined areas at least on one or both of the scanning electrode wiring and the signal electrode wiring, wherein a metal layer contacts the scanning electrode wiring and/or the signal electrode wiring through the opening. Accordingly, the Applicants respectfully assert that claims 5, 11, 18, and 23-25 are allowable.

Claims 36-39

Nor can the Kim reference make up for the deficiencies of the Watai reference. The Kim reference does not teach providing openings at predetermined areas on one or both of the scanning electrode wiring and the signal electrode wiring, wherein a metal layer contacts the scanning electrode wiring and/or the signal electrode wiring through the opening. Accordingly, the Applicants respectfully assert that claims 36-39 are allowable.

Although it is not believed that any additional fees are needed to consider this submission, the Examiner is hereby authorized to charge our deposit account no. 04-1105 should any fee be deemed necessary.

Respectfully submitted,

Date: May 21, 2004

By: _____

George W. Hartnell, III
Reg. No. 42,639
Attorney for Applicant(s)

EDWARDS & ANGELL, LLP
P.O. Box 55874
Boston, MA 02205
(617) 517-5523
Customer No.: 21,874
442952